

WHAT IS CLAIMED IS:

1. A method allocating channels in a CDMA packet data system, comprising:
providing channel availability information for each of a plurality of channels
from a base station to each of a plurality of terminals;

5 dynamically allocating available channels to corresponding ones of the
plurality of terminals to allow the transmission of packet data according to the available
or unavailable state of each channel;

transmitting a state signal from the base station over each of the allocated
channels indicating the unavailable state of the allocated channels.

2. The method of claim 1, wherein the base station transmits information
containing all PN codes used by the base station to each one of the plurality of terminals.

3. The method of claim 1, wherein the step of dynamically allocating the
available channels comprises:

5 simultaneously monitoring each of the plurality of channels in parallel to
detect whether the state signal indicating channel availability is transmitted by the base
station over any of the plurality of channels;

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sending the packet of data through an idle channel, if an idle channel signal is detected;

waiting until an idle channel is available, if an occupied channel signal is detected.

4. The method of claim 3, wherein the step of simultaneously monitoring each of the plurality of channels comprises detecting on each channel one of a power control signal and an idle signal, wherein the power control signal is the occupied channel signal indicating unavailability of the channel, and the idle channel signal indicates channel availability.

5. The method of claim 1, wherein the step of transmitting a state signal from the base station comprises:

transmitting a power control signal through a downward link channel corresponding to the allocated channel through which the packet of data is transmitted when synchronization is acquired using a preamble of the data packet; and

transmitting a channel occupancy release signal through the downward link channel corresponding to the allocated channel through which the data packet was transmitted when the data packet has been fully received.

6. The method of claim 1, wherein each of the available channels are dynamically allocated to different ones of the plurality of terminals.

7. The method of claim 6, wherein each one of the plurality of channels comprises a traffic channel and a signaling channel, and wherein the data packets are transmitted over the data channel and the state signal is transmitted over the signaling channel.

8. A method for transmitting packet data by dynamically allocating channels in a communication system, comprising:

determining which, if any, of a plurality of communication channels is in an occupied state using a corresponding plurality of PN codes; and

one of transmitting a data packet through a dynamically allocated unoccupied one of the plurality of channels for transmission and monitoring each one of the plurality of channels to determine when the occupied state of one of the plurality of channels is released, if there is no channel in the unoccupied state.

9. The method of claim 8, wherein the step of determining the occupied state comprises simultaneously multiplying the PN code for each channel by a signal received from a base station.

10. The method of claim 9, wherein the multiplication is performed at a rate equal to a power control signal transmission rate of the base station.

11. The method of claim 8, wherein the step of transmitting the data packet comprises:

determining that a channel using a prescribed one of the plurality of PN codes is in an idle state and transmitting the data packet on the idle channel, if a base station transmits an idle signal on the channel;

determining that each one of the plurality of channels is in an occupied state and waiting until one of the plurality of channels becomes idle if the base station transmits a power control signal on each channel.

12. The method of claim 11, wherein a signal transmitted from the base station is multiplied by each one of the plurality of PN codes to determine if the channel associated with a prescribed one of the PN codes is occupied or idle.

13. The method of claim 12, wherein a power control signal transmitted on a channel indicates that the channel is occupied.

14. The method of claim 12, wherein each channel has a unique PN code.
15. The method of claim 12, wherein each channel comprises a signaling channel and a traffic channel.
16. The method of claim 11, wherein a terminal transmitting the data packet has stored in the terminal the PN code for each one of the plurality of channels.
17. A method for informing a plurality of terminals of the occupied or unoccupied state of channels of a CDMA system, comprising:
- providing a unique PN code for each one of a plurality of channels used in the CDMA system from a base station to each one of a plurality of terminals in communication with the base station;
 - transmitting a power control signal over an occupied channel using the PN code of the occupied channel; and
 - transmitting an idle signal over an idle channel using the same PN code as the idle channel.
18. The method of claim 17, wherein the power control signal is transmitted on a channel when the base station acquires synchronization and phase of a data packet

transmitted by one of the plurality of terminals, and wherein the idle signal is then transmitted on the channel when the base station has received the entire packet of data.

19. The method of claim 18, wherein each one of the plurality of terminals has stored therein the unique PN code of each one of the plurality of channels.

20. A method allocating channels in a CDMA packet data system, comprising:
receiving channel availability information for each of a plurality of channels from a base station;

dynamically allocating an available channel and transmitting a packet of data to the base station using the allocated channel;

receiving from the base station a power control signal on the allocated channel.

21. The method of claim 20, wherein the power control signal is released when the data packet has been transmitted.

22. The method of claim 20, wherein the power control signal indicates unavailability of the channel.

23. The method of claim 22, wherein a plurality of terminals are configured to simultaneously monitor channel availability information for all channels of the base station and transmit data on the first available channel detected.

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